Paper No. 27

# UNITED STATES PATENT AND TRADEMARK OFFICE

## BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES



Ex parte DAVID S. BREED

Appeal No. 2001-2392
Application No. 09/114,962

HEARD: February 5, 2002

Before COHEN, ABRAMS, and NASE, Administrative Patent Judges.

ABRAMS, Administrative Patent Judge.

## DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-7, 9-14, 16-19, 21-24 and 26-31, as amended after the final rejection. Claims 8, 15, 20 and 25 stand objected to and allowable if rewritten in independent form.

We AFFIRM-IN-PART.

## BACKGROUND

The appellant's invention relates to a side impact air bag system for vehicles. An understanding of the invention can be derived from a reading of exemplary claim 1, which appears in the appendix to the appellant's Brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

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|---|---|---|
| Merhar | 3,701,903 | Oct. 31, 1972 |
| Haviland | 3,791,667 | Feb. 12, 1974 |
| Breed | 4,666,182 | May 19, 1987 |
| Lau et al. (Lau) | 5,273,309 | Dec. 28, 1993 |
| Spies et al. (Spies) | 6,015,162 | Jan. 28, 2000 (filed May 21, 1993) |

Claims 1, 6, 10, 12, 28 and 29 stand rejected under 35 U.S.C. § 103 as being unpatentable over Haviland in view of Breed.

Claims 2-4, 14 and 30 stand rejected under 35 U.S.C. § 103 as being unpatentable over Breed in view of Haviland and Merhar.

Claims 5, 7, 9 and 11 stand rejected under 35 U.S.C. § 103 as being unpatentable over Breed in view of Haviland and Spies.

Claim 13 stands rejected under 35 U.S.C. § 103 as being unpatentable over Haviland in view of Breed and Lau.

Claim 31 stands rejected under 35 U.S.C. § 103 as being unpatentable over Haviland in view of Breed and Spies.

Claims 16-19, 21-24, 26 and 27 stand rejected under 35 U.S.C. § 103 as being unpatentable over Breed in view of Spies.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Answer (Paper No. 19) and the final rejection (Paper No. 6) for the examiner's complete reasoning in support of the rejections, and to the Brief (Paper No. 15) and Reply Brief (Paper No. 22) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

All of the rejections are under 35 U.S.C. § 103. The test for obviousness is what the combined teachings of the prior art would have suggested to one of ordinary skill in the art. See, for example, In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981). In establishing a prima facie case of obviousness, it is incumbent upon the examiner to provide a reason why one of ordinary skill in the art would have been led to modify a prior art reference or to combine reference teachings to arrive at the claimed invention. See Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Int. 1985). To this

end, the requisite motivation must stem from some teaching, suggestion or inference in the prior art as a whole or from the knowledge generally available to one of ordinary skill in the art and not from the appellant's disclosure. See, for example, Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1052, 5 USPQ2d 1434, 1439 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988).

The Rejection Of Claims 1, 6, 10, 12, 28 and 29

Claim 1 is directed to a vehicle including a side impact airbag system. It recites a system housing arranged on the side of passenger compartment, an airbag in the system housing, inflator means at least partially in the interior housing, and a crash sensor for initiating inflation of the airbag, with the sensor comprising "a sensor housing arranged within said system housing" (emphasis added) and a sensing mass in the sensor housing to move relative to the sensor in response to accelerations from a crash into the side of the vehicle. Claim 1 stands rejected as being unpatentable over Haviland in view of Breed. Our understanding of the examiner's position is that Haviland discloses a side airbag system but does not recite the details of the location of the sensor, that Breed teaches locating the sensor housing and sensor within the system housing, and that it would have been obvious to one of ordinary skill in the art to modify Haviland by including the airbag sensor system of Breed in the system housing along the sides of the vehicle. The appellant argues that Breed teaches that the sensor

be located outside of the crush zone, and therefore would not have suggested the modification to Haviland proposed by the examiner.

We find ourselves in agreement with the appellant. The airbag system disclosed in Haviland is located in the zone that would be crushed in the event of a side impact, and the reference provides no details concerning the location of the sensor. Breed appears to be concerned with improvements to airbag systems that respond only when there is frontal impact upon a vehicle, for there is no mention of side impacts or side impact airbag systems. The objective of the Breed invention is to locate damped sensors outside of the crush zone, particularly if they are of the type which can rapidly discriminate between crashes that do and do not require air bag deployment, because this results in a simpler system (column 1). Most importantly to our conclusion, Breed states at the outset that "[t]his invention provides a damped sensor for use outside the crush zone of a vehicle or in other words a non-crush zone sensor" (column 1, lines 63-65, emphasis added) and, in our view, there is nothing in the detailed explanation of the invention which would convey to one of ordinary skill in the art that it also can be used within a crush zone. In fact, a reading of the patent would, in our view, provide no such suggestion to one of ordinary skill in the art.

From our perspective, the only suggestion for utilizing the Breed system, which the patent teaches is for use only outside of a crush zone, in the Haviland arrangement

of airbags, which are located within the side crush zones of the vehicle, is the hindsight afforded one who first viewed the appellant's disclosure. This, of course, is not a proper basis for a rejection under Section 103. In re Fritch, 972 F.2d 1260, 1264, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992).

We therefore conclude that the combined teachings of Haviland and Breed fail to establish a prima facie case of obviousness with regard to the subject matter recited in claim 1, and we will not sustain the rejection. It follows that we also will not sustain the rejection of claims 6, 10 and 12, which depend from claim 1.

Claim 28 sets forth the invention in terms quite similar to claim 1, and after reciting that there is an inflator means comprising an inflator housing that is arranged at least partially within the interior space of the system housing, states that the sensor housing is arranged "proximate to said inflator housing."[1] It is our view that the reasoning we set forth above with regard to claim 1 also applies here, inasmuch as the required location of the sensor housing places it within the side crush zone.

The rejection of independent claim 28 and dependent claim 29 is not sustained.

The Rejection Of Claims 2-4, 14 and 30

These claims stand rejected as being unpatentable over Breed in view of Haviland and Merhar. They depend from claims 1 and 28, which were discussed

[1]The common applicable definition of "proximate" is "very near." See, for example, Webster's New Collegiate Dictionary, 1973, page 929.

previously, and thus include all of the structure recited in the claims from which they depend. We first conclude that considering Breed to be the primary reference instead of Haviland does not overcome the problem discussed above with regard to claims 1 and 28, for it is still necessary to the rejection to place the Breed sensor in the Haviland side airbag system, a modification which we concluded above failed for lack of proper suggestion to combine the references to achieve such a result. That shortcoming is not cured by further considering the Merhar, which was cited for disclosing an electronic crash sensing system based on the movement of a mass and a piezoelectric crystal.

The rejection of claims 2-4, 14 and 30 is not sustained.

The Rejection Of Claims 5, 7, 9 and 11

These claims depend from claim 1, and the addition of Spies to Breed and Haviland does not overcome the problems we found in combining the latter two references. The rejection of claims 5, 7, 9 and 11 is not sustained.

The Rejection Of Claim 13

This rejection adds Lau to Haviland and Breed for its teaching of mounting the sensor on the door pillar between the inner and outer panels. Be that as it may, as was the case with the addition of other third references to Haviland and Breed, Lau fails to overcome the basic problem of lack of suggestion to combine Haviland and Breed. The rejection of claim 13 therefore also is not sustained.

The Rejection Of Claim 31

This claim depends from claim 28. Consideration of Spies in addition to Haviland and Breed does not alleviate the problem with combining the primary references in the manner specified by the examiner, which we treated above with regard to claim 1. The rejection of claim 31 is not sustained.

The Rejection Of Claims 16-19, 21-24, 26 and 27

These claims differ significantly from independent claims 1 and 28 in that they are not directed to a vehicle and do not relate the components of the invention to a crush zone. Independent claims 16 and 22 both recite, inter alia, an inflator housing containing an ignitable gas and at least one passage extending between the gas generating material and the interior of the airbag, and a crash sensor comprising "a sensor housing situated exterior of said inflator housing" and including a micro-processor for determining whether the movement of a sensing mass over time results in a value which is in excess of a threshold value for causing the gas to be ignited. It is the examiner's position that Breed discloses all of the claimed subject matter except that the sensor housing is inside of the inflator housing, but it would have been obvious to place the sensor element outside of the sensor housing in view of Spies' teaching in lines 1-6 of column 2 of providing that those parts with critical fillings could be separated

from other parts for recycling or disposal to protect the environment (Paper No. 6, page 7).

As shown in Figure 1, Breed discloses a sensor-initiator (10) which contains the sensors in a housing (40) mounted in a cavity extending inside the inflator housing (12), as is explained in column 2, line 26 et seq.. The inflator housing is, in turn, received in another cavity in the air bag housing (16). Breeds therefore does not disclose or teach mounting the sensor housing exterior of the inflation housing, as is required in claims 16 and 22.

Spies explains that an object of the invention is to keep separate those parts with "critical fillings" to reduce chemical and electrical hazards and to allow separation to facilitate recycling and disposal to protect the environment (column 1, line 66 et seq.). In the embodiment shown in Figure 2, an integrated chip crash sensor (2) is located in a housing (1) along with the explosive primer, with the sensor housing being exterior of the inflator housing and communicating with it via a probe (18) extending through a cavity in the inflator housing. This provides the separation between elements with critical fillings that Spies desires, and allows them to be separated from one another for recycling or disposal of their contents.

We agree with the examiner that it would have been obvious to one of ordinary skill in the art to modify Breed by replacing the internally positioned sensor housing with

an externally positioned one, in view of the showing of Spies, suggestion being found in the explicit teaching of Spies that providing separation would reduce hazards and facilitate disposal. It is significant that in both Breed and Spies the sensors communicate with the inflator housing through cavities in the exterior wall thereof.

We therefore are of the view that the combined teachings of Breed and Spies establish a prima facie case of obviousness with regard to the subject matter recited in claims 16 and 22, and we will sustain the rejection of these claims and of dependent claims 17-19, 23, 24 and 27, the patentability of which were not separately argued. In arriving at this conclusion, we have carefully considered the appellant's arguments but have not been persuaded that the rejection should not be sustained, for we do not agree that the Spies sensor is incompatible with the Breed system.

The appellant has argued that dependent claims 21 and 26 are separately patentable because the Spies primer is not arranged in the same housing as the gas generating material. That is not correct, for Spies discloses in Figure 1a that housing (1) encapsulates an electronic integrated circuit (2) and a primer (4). The rejection of claims 21 and 26 also is sustained.

## SUMMARY

The rejections of claims 1-7, 9-14 and 28-31 are not sustained.

The rejection of claims 16-19, 21-24, 26 and 27 are sustained.

The decision of the examiner is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

## AFFIRMED-IN-PART

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